

Docket No. DP-302561  
DEP-0128

### REMARKS

Claims 1-20 are pending in the present application. Claims 2, 3, 17, and 18 have been canceled, Claims 21-23 have been added, and Claims 1, 4, and 16 have been amended, leaving Claims 1, 4-16, and 19-23 for consideration upon entry of the present Amendment. Support for new Claims 21-23 can be found in originally filed Claim 20. Support for the amendments made to Claim 1 can be found in originally filed Claim 3, while support for the amendment to Claims 16 is found on Page 9, paragraph 3 of the Specification. No new matter has been introduced by these amendments. Reconsideration and allowance of the claims is respectfully requested in view of the above amendments and the following remarks.

#### Information Disclosure Statement

The Examiner noted that the Japanese Patent Document No. JP4367707 and dated 11/25/1992, was not found in the file and has been canceled from the Form 1449. Form 1449 listed the Patent twice, and on one of the entries entered the wrong filing date (11/25/1992); therefore, Applicants submit that the listing of JP4367707A having a filing date of 11/25/1992 was a typographical error. Therefore, the Examiner has correctly canceled this patent from Form 1449.

#### Claim Rejections Under 35 U.S.C. §102(b)

Claims 1-3, 5-14, and 16-18 stand rejected under 35 U.S.C. §102(b), as allegedly anticipated by U.S. Patent No. 5,051,392 to Mabilon et al. ("Mabilon"). The Examiner alleges that Mabilon discloses a catalyst for nitrogen oxides (Column 1, lines 18-20) comprising a porous layer containing 0.1 to about 35% calcium and neodymium (abstract); and hence, has rejected Claims 1-8. Claims 9-12 were rejected as the Examiner alleged that Mabilon discloses 0-35% zirconium (Column 2, lines 32-37). The Examiner rejected Claims 13-14 stating that Mabilon discloses mixing ammonia with alumina (Column 5, lines 64-68 and Example 16). The Examiner further alleges that Mabilon discloses a catalyst for nitrogen oxides (Column 1, lines 18-20) comprising a porous layer containing mixtures of 0-35% calcium and neodymium (abstract), zeolite (Column 3, line 54), 0-35% zirconium (Column 2, lines 32-37), and ceramic (Column 3, line 26); and hence, has rejected Claims 16-18.

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Mabilon teaches a catalyst having a porous layer, wherein the porous layer comprises at least one refractory inorganic oxide; about 0.1 to about 25% of at least one uranium oxide; about 0.1 to about 35% of at least one oxide of at least one metal selected from the group consisting of lithium, sodium, potassium, rubidium, cesium, beryllium, magnesium, calcium, strontium, barium, lanthanum, praseodymium, neodymium, gadolinium, yttrium, and zirconium; and a catalytically active phase.

The present application teaches a NOx occluding catalyst comprising an outer layer having at least about 50 wt% of an alkaline earth component, and not more than about 42 wt% of a rare earth component (Claim 1). Claims 1 and 16, therefore, require the use of more than about 50% of the alkaline earth component. This differs from the catalyst in Mabilon, which uses oxides comprising various alkaline earth oxides at percentages of about 0.1 to about 35% (Column 2, lines 31-33).

To anticipate a claim, a reference must disclose each and every element of the claim. *Lewmar Marine v. Varient Inc.*, 3 U.S.P.Q.2d 1766 (Fed. Cir. 1987). Because Claims 1, 5-14, and 16 contain elements not disclosed in Mabilon, Mabilon does not anticipate these claims. Therefore, reconsideration and withdrawal of this rejection is requested.

Claims 1-4 and 16-20 stand rejected under 35 U.S.C. § 102(b) as allegedly anticipated by U.S. Patent No. 4,988,660 to Campbell et al. ("Campbell"). The Examiner rejected Claim 1, stating that Campbell discloses catalysts comprising neodymium (Column 3, line 45) and calcium (Column 7, lines 5-60). The Examiner also rejected Claims 16 and 20 stating that Campbell discloses up to about 60% calcium oxide (Column 7, lines 52-60), neodymium (Column 3, line 45), zirconia (Column 7, lines 66-67), and alumina (Column 8, lines 14-18). Applicants respectfully traverse the Examiner's rejection.

Campbell discloses alkali metal doped perovskites useful in the oxidative coupling of alkanes to higher hydrocarbons (abstract). Perovskites are very specific compounds. Campbell does not teach or suggest that these compounds are NOx occluding catalysts, and Applicants submit that artisans do not consider perovskites as useful in NOx reduction. Therefore, Applicants submit that by claiming a NOx occluding catalyst, Applicants have provided a limitation not taught in Campbell.

To anticipate a claim, a reference must disclose each and every element of the claim. *Lewmar Marine v. Varient Inc.*, 3 U.S.P.Q.2d 1766 (Fed. Cir. 1987). Because Applicants'

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require the catalyst to be a NOx occluding catalyst, Applicants have provided an element not disclosed in Campbell, as Campbell discloses pervoskites and fails to disclose NOx occluding catalysts. Therefore, as Campbell does not disclose the NOx occluding element found in Applicants' claims, it cannot anticipate Applicants' claims. Reconsideration and withdrawal of this rejection is requested.

With further regard to Campbell in relation to the Examiner's rejection of Claims 4, 16, 19, and 20, the Examiner contends that Campbell discloses up to about 60% calcium oxide (Paper 3, page 4). Applicants further submit that according to Campbell, the alkaline earth metal components are "generally in an amount of at least 0.01, say, about 0.1 to 60, and typically, 1 to 30, weight percent based on the total weight of the catalyst" (Column 7, lines 54-57). Applicants' Claims 4, 16, 19, and 20, however, claim an alkaline earth oxide (or a calcium oxide) component of at least about 70 wt%. Additionally, Claims 16, 19, and 20 claim specific amounts of stabilizer and binder which is not disclosed in Campbell.

Therefore, it is respectfully submitted that Campbell does not disclose an element of Applicants' claim, and, as such, Campbell does not anticipate the present application.

The Examiner next rejected Claims 1, 13, and 15 under 35 U.S.C. § 102(b), as allegedly anticipated by U.S. Patent No. 5,319,929 to Cornelison et al. ("Cornelison"). The Examiner rejected Claim 1, stating that Cornelison discloses a catalytic converter comprising neodymium and calcium (Column 10, lines 25 and 30). The Examiner rejected Claims 13 and 15, stating that Cornelison discloses 5% aluminum and oxygen (Column 10, lines 21 and 27). Applicants respectfully traverse these rejections.

Cornelison discloses an exhaust system for an internal combustion engine. One of the components of the system is a metal foil comprising an alloy (Column 9, lines 50-68, Column 10, lines 1-10). Cornelison discloses specific alloys useful in the composition of the foil wherein the alloy includes 0.002% - 0.05% of at least one rare earth metal (Column 10, lines 21-23), and less than 0.005% of calcium (Column 10, lines 30-31).

The present application is distinguishable over Cornelison in that Applicants have claimed the use of an alkaline earth component in an amount of at least about 50 wt%, whereas Cornelison discloses the use of less than 0.005% calcium. Therefore, Applicants' use of an alkaline earth component exceeds that used by Cornelison.

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To anticipate a claim, a reference must disclose each and every element of the claim. *Lewmar Marine v. Varient Inc.*, 3 U.S.P.Q.2d 1766 (Fed. Cir. 1987). As the amount of alkaline earth component used by Applicants greatly exceeds that disclosed in Cornelison, Applicants point out that Cornelison omits an element of Applicants' claims. Reconsideration and withdrawal of this rejection is requested.

It is believed that the foregoing amendments and remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicants. Accordingly, reconsideration and withdrawal, and allowance of the case is requested.

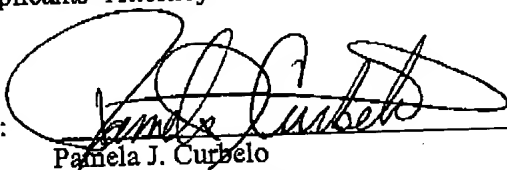
If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 50-0831 maintained by Applicants' attorneys.

Respectfully submitted,

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**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

A marked-up version of Claims 1 and 16 follows:

Claim 1. (Amended/Marked-up) A catalyst for treating an exhaust gas stream comprising:

a NOx occluding catalyst structure having an outer layer comprising at least about 50 weight percent of an alkaline earth component, and not more than about 42 weight percent of ~~and~~ a rare earth component.

Claim 4. (Amended/Marked-up) The catalyst of Claim 3~~1~~ wherein the outer layer comprises an alkaline earth component in an amount of at least about 70 weight percent and a rare earth component in an amount of not more than about 30~~25~~ weight percent.

Claim 16. (Amended/Marked-up) A catalyst for treating an exhaust gas stream comprising:

a NOx occluding catalyst structure comprising an alkaline earth exchanged zeolite and an alkaline earth alumina having an outer layer comprising at least about 50 wt% of an alkaline earth oxide component, not more than about 42 wt% of a rare earth oxide component, a surface area stabilizer, and a ceramic oxide binder.